Chapter IV

THE PERCEPT

SO far we have been talking about the bodily machinery through which we become conscious of our surroundings. We have seen that things in the outer world have certain qualities: heat, cold, colour, shape, size, weight, texture, sound, etc., which make impressions on the nerves whose end-organs are adapted to receive them; that these sense-impressions are carried to the brain along the afferent nerves; that, arriving at the brain, they become sensations, and that then we are aware of them. The outward impression, the nerve-fibre, and the message it carries, these are physical facts; the awareness is a psychical fact. We have been transported to the other side of the wall and are in the region of consciousness. These sensations begin soon after we are born, and they come thick and fast. As all the sense organs are continually sending messages from the outer world into the soul, it would seem as if confusion must constantly reign there. And so it does, no doubt, in the earliest period of the young child's life. 'The object which the numerous inpouring currents of the baby bring to his consciousness is one big, blooming, buzzing confusion. That confusion is the baby's universe.'—*James.*

100. But very soon the mind begins to select from the crowd of sense-impressions those which, from their greater intensity, have most attraction for it—a bright light, a moving figure, a loud

voice. These it *attends* to, momentarily, and the rest are as if they were not. Attention, then, is a process of selection. Watch a young child for five minutes and you will see this mental process going on. How the eyes travel from object to object, attention attracted to each in turn, and as easily *dis*tracted, i.e. *at*tracted by something else. Every attitude, especially every attitude of the head, tells you what the baby mind is attending to for the moment. You can see what attracts him, just for a second or two; you can notice the process of selection.

101. At this stage we can recognize that the objects which he sees have no meaning for the baby. He has only momentary isolated impressions and sensations. But these impressions, momentary though they be, leave their traces on the brain, and these traces remain, so that with every fresh impression there is mingled 'the awakened vestige of the last impression,' the fresh impression making it deeper and stronger.

102. From one object the child gets several separate sense-impressions. His rattle, for example. Its ivory handle makes a colour impression on the optic nerve. This, when telegraphed to the brain, becomes a sensation of 'whiteness.' From the sense of touch, as he grasps it or puts it in his mouth, he gets sensations of 'smoothness' and 'hardness.' The little silver bells send messages of 'brightness' through the eye and of 'sound' through the ear. To these he attends, now to this, now to that, until with the repetition of these experiences an association is set up between the

several sense impressions, and these again are associated with the object whence they came, and now the baby's rattle has a meaning for him. He begins to show this by his behaviour. Instead of grasping it by mere reflex action, he shakes it for the sake of its sound. This is the dawning of perception. Each sense tells the child something *about* an object in the outer world, and these several bits of knowledge combine to give the object a meaning for him. Sensation is merged in perception, and the picture in his mind which corresponds to the object in the outer world is called a Percept.

103. The favourite illustration of this fact in psychology books is an orange; and it is a very good one, because so many senses have contributed to the perception we have of it as it lies before us. We have learnt from touch that it is cool and rather rough-skinned; the nose has taught us its scent and the palate its flavour, and through muscular resistance we have had impressions of its weight. By clasping it in our hands we know that it is globular. The eye only tells us of its colour and outline, but as we look we are reminded of all the other sensations through which we have learnt to know it. These start up from within, and, joining forces with the yellow spot before us, give it a meaning it would not have had by itself. We have then a Percept of the orange.

104. At the moment of perception we are not conscious of these separate sensations. We do not think of an orange as a yellow-round-cool-sweet-juicy thing. It is just 'an orange.' The

perception is one stroke of thought. But when we analyse a percept, as we have been doing just now, we recognize that it is through different channels and by separate sensations that the knowledge has come to us which gives to each object its fringe of meaning. The sensations are there, but we do not at the moment 'tot them up,' so to speak. And this 'fringe of meaning,' says Professor Lloyd Morgan, is 'for one's personal behaviour.' It must needs be so, if it be true that 'all states of mind are motor in their consequences —followed by bodily activity of some sort.'—(*James.*) If we grown-ups do not recognize that this is true in our own case, it is because, as we have said before, we are constantly—though perhaps not consciously—inhibiting our tendencies to action, and we certainly do recognize it in the case of the little child. The 'fringe of meaning' attaching to the objects around him is a meaning for behaviour. Thus a table soon becomes something to put things on; water in a glass is something to drink, water in a basin something to dabble in; a ball is something to toss; a chair something to climb into. The piano suggests delightful sounds that will come if he bangs it with his fists. His shoes are meant for his feet, and all doubtful things are meant to go into his mouth.

105. The fringe of meaning comes from experience. Perception therefore includes something of memory; that is to say, it is 'not an affair of *merely* catching sight of an object.' A sensation quite unconnected with any previous experience has no meaning for us; its significance depends

on the number and strength of its threads of connection with previous experiences. Thus the mind is always joining up its little bits of experience, adding to its knowledge of individual things, noticing the relations between them, seeing more in each than it at first perceived. And the mind does this by its own activity, without any effort on our part.

106. Perception develops: in rapidity, in the amount of total grasp, but chiefly in the content of the fringe of meaning. Titchener divides it into three stages. 'First the pure perception, made up entirely of outside sensations; then the mixed perception . . . made up partly of inside and partly of outside sensations; and lastly the symbolic perception, in which the only service done by the outside sensations is that of arousing important inside processes.'

107. Pure perception seems to me a wrong term, involving a contradiction. If perception depends on the consciousness of a meaning, however limited—and on this all psychologists, including Professor Titchener himself, seem to be in agreement—and if the meaning is the result of past experiences, then the feeblest perception must be 'mixed.'

108. As experience grows, memory enters more and more into perception, until 'the mind becomes ready to meet the material thing half way, and a full and complete perception can be touched off by a single aspect of a thing, and the other aspects supplied by sensations aroused within the brain.'—*Titchener.*

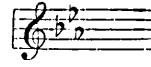
109. When you see a peach in a fruiterer's window your percept of it is complete without the aid of touch or taste or smell. Sight gives you its colour and outline, but mentally you can feel its velvety surface, smell its rich aroma, taste its juicy flesh; with your mind's eye you can even see the stone in the middle. And though you know you cannot put out your hand and take it, the fringe of meaning 'for behaviour' is there right enough.

110. This kind of perception, so familiar to us all, is manifestly 'mixed.' In fact, by far the greater part of it is a revival of sensations from within. The child's everyday perceptions, and our own, are of this kind. The child's percept differs from ours only in the proportion of outside to inside sensation. The child is nearer to the sensational level, that is all.

111. Now we must not run away with the notion that sight is the only sense through which perception comes, that the 'object' of any mental process is necessarily something seen. You find a garment in a dark room by touch, and as you touch you seem to see. You have a revival of the colour of the stuff and of the pattern on it as well as of its texture. You *perceive* it through touch alone. Or in the morning a certain odour assails your nostrils and you say, 'Ah, bacon for breakfast!' You do not need to *see* it in the pan or *hear* it fizzling. All that is in the fringe of meaning, with perhaps a vision of the breakfast table and its surroundings, a sense of satisfactory anticipation, and a feeling that you must hurry up and

dress. In this case the 'complete perception is touched off' by your nose.

112. So far, the development of perception is the result of everyday experience. The child learns, from his surroundings, through his senses and through intercourse with his elders, quite naturally and without any formal teaching. But there is a further stage, that of symbolic perception, to which we, as teachers, have to introduce the child. When you, my readers, take up a piece of music, the sensations from outside—i.e. the impressions made upon your optic nerve by those black marks of various shapes—are the same for you and for the child who has never had a music lesson. But in your case, in proportion to your musicianship, those black marks 'arouse important inside processes,' and your complete percept includes a mental hearing of the music represented by that page of symbols. Each symbol, each group of symbols, has a meaning for you that it has not for the uninstructed child. And it is a meaning for behaviour; for what happens when you grown-up people are playing at sight?

113. You see—or perceive, or have a percept of—a key-signature, for instance:  What is your behaviour at the sight of it? Automatically your fingers get ready to play in that key; the keyboard seems to arrange itself in that key in your mind. You see a time-signature ($\frac{3}{4}$), and before you play a note your mind falls into the swing of three-pulse measure. You see a thing this shape , or that , and automatically you increase or

decrease the tone. The violinist sees a mark of this shape ⊓, or that ∧, and automatically his bow moves in a certain direction. To this stage at least of symbolic perception we have to bring our pupils.

114. Or take this other example. You are learning a piece, and find a certain passage difficult with the marked fingering. You choose a fingering to suit your hand, and then *you draw your pencil through the marked figures and substitute those for your own fingering*. Why do you do that? You say 'to help me to remember it.' Not altogether; for fingering is best memorized (and is always eventually memorized) through the muscles; so that the quickest way to fix it would be to practise the new fingering at once until it became automatic. But you know that even if you did this, and left the old fingering there, your fingers would automatically obey the eye, and you would be thrown out every time. You substitute another set of figures, and your experienced nerves and muscles obey these.

115. A great part of the music teacher's work consists in the teaching of notation—the meaning and use of musical symbols; and in the teaching of notation the fringe of meaning *for behaviour* is very important. The only real proof that a pupil understands a musical symbol is that he *does* the right thing in response to it. Instead of asking 'What is a sharp?' notice what a child does when he sees one. If his behaviour is not right, his description or definition is useless; if he does the right thing, it is unnecessary.

116. I have seen the names of the lines and

spaces taught in class with a large staff diagram. It was very well done, and the children answered quickly and easily. But this sort of exercise must necessarily miss the mark; for what happens in actual playing from the printed page? There is first the message *in* from the note or line or space to the brain—the *im*pression; and then the message *out* from the brain to the muscles—the *ex*pression —the behaviour, in fact. Now, from drill on the diagram we only get half the work done—the recognition. The answering message to the muscles is not sent out, and no behaviour follows. A child may do well in a class such as I have described, and yet from difficulty in *localizing* the sounds on the keyboard may be a slow and stumbling sight player. Interval reading, for the same reason, is unsuitable for class teaching. Recognition of a fourth or a sixth is only half the battle. The response of the finger—the behaviour —is what we want. Locality and Interval,* therefore, should be taught at the keyboard. The large staff diagram is, of course, invaluable in the singing class, used as a modulator. But here the conditions are different; the behaviour is vocal, and theory and practice are kept together. The large keyboard diagram is also extremely useful. It, too, can be used as a modulator with excellent results.† In all such work the only *use* of the outside sensation received from the symbol is to arouse a certain activity in the mind, a mental behaviour, which again is related to and followed

* I refer here to the exercises in my own books.—A. J. C.
† See 'Teacher's Guide,' page 192.

by a physical behaviour if the perception is complete.

117. The stage called symbolic perception is an artificial one. The child enters on it when he begins to learn his alphabet; and at every step, in connection with new subjects, new sets of symbols confront him. Hardly has he learnt to read when he has to tackle the notation of arithmetic, and music brings him yet another set of signs. The function of each sign is to set going some mental activity leading to a certain result.

118. If I write in two columns the figure 6 and the figure 2, I can, by placing a different sign between each pair of figures, cause a different process to occur in your minds, and each time you will give me a different result. But if the figure 6 and the figure 2 have not themselves acquired a meaning for a child's mind by concrete experience, i.e. by arranging objects in number-groups and then by visualizing these groups; and if the further processes of splitting up these groups or adding them together has not actually been *done* over and over again in the concrete, the additional symbols we have just been using could not have any meaning or arouse any mental process whatever.

6	2	$6 + 2$
6	2	$6 - 2$
6	2	6×2
6	2	$6 \div 2$

119. What, then, is the use of telling a little child that a thing this shape (♩) is worth two things that shape (♩ ♩)? It conveys nothing to him. Nor does it help towards any musical truth if we compare it to a penny in its relation to two halfpennies; for minims and crotchets are not

symbols of money-values but of sound-values. The sounds and their relations to each other must be realized first. Then the analogy with the arithmetical values is seen and understood.* But whatever the subject, the same educational maxim holds good—namely, that the thing signified must be known before the symbol is introduced. The younger the pupil the more necessary it is to follow this rule.

120. Ordinary relationships repeat themselves in daily life, and by repetition the relationship is strengthened. But the relationship of a musical sign to a musical sound, because it is purely artificial and arbitrary, is an experience which has to be deliberately presented to a child's mind again and again until the connection is firmly established and the right response made habitual. We shall have more to say about this later on.

121. Sight-singing requires a higher degree of symbolic perception than sight-playing. In sight-singing there is (*a*) the recognition of a symbol; (*b*) the mental hearing of the corresponding sound; (*c*) the production by the voice of the sound that has been realized mentally; (*d*) the recognition of the sound now heard by the outer ear as the same that was heard mentally. The singer cannot produce a note until he has realized its pitch mentally. In playing the piano this inward pre-hearing is not necessary. The process is simpler, more mechanical, more meagre altogether. The player simply (*a*) recognizes the symbol, line or

* For suggestion as to procedure see 'Teacher's Guide,' Preliminary Course, Third Lesson.

space; (*b*) finds the corresponding pianoforte key; (*c*) hears the sound with his outer ear. Because the pre-hearing is not *necessary* in the reading of pianoforte music, no effort, as a rule, is made to encourage it; and the average schoolgirl or adult amateur is unable to realize the melody of a piece of music (much less its harmony) by looking at it. A good many pianoforte teachers are equally unable to 'hear with their eyes.'

122. The foregoing applies to the realization of pitch. With regard to time the singer and the player are equally in need of realizing sound through sight. If, when looking at a group of notes, we do not hear, mentally, the *patter* of their rhythm, the passage is quite likely to be incorrectly played. The fact that pupils who correctly work problems in note-values in 'theory' papers are helpless in front of a very simple sight-test proves this. The arithmetical relation of the notes must be taught, because it is the basis of the time-theory, but in practice it only helps up to a certain point, when there is time to think it out, and we cannot stop to do sums when reading at sight. If the groups of notes do not say something to us we are helpless. The *time-names* help them to say that something, so that little children hear as they look.

123. In our teaching of notation we should cultivate quickness of response. The time needed for the response—or the 'reaction time,' as it is called—varies in individuals. The teacher must remember this. The physiological psychologist, the man who works in a laboratory, can measure

the reaction-time of individuals to the fraction of a second. The teacher cannot do that, but she must look out for indications of it and make allowance for the personal equation of the pupil. If the reaction-time is slow she must use devices to improve it;* but she must not call the slow thinker 'stupid.' The child who sees a point in a flash is a delightful pupil, especially for a teacher with a similarly quick brain. Both are happy. But I have known a very quick-brained pupil bored to death by a very excellent teacher who tried to keep him to a slower pace. On the other hand the quick-brained teacher is apt to condemn as stupid the slow-brained pupil. This is a mistake, and may be a great injustice. A slow brain is often a very good brain.

124. Children may be classified, according to their temperament, as *motor* and *sensory:*

'Motor children are those that respond very readily to any outside influence, and this response takes the form of immediate action. . . . They learn quickly, but do not retain particularly well what they have learnt. . . . Sensory children are slower in responding to any stimulus. They receive all manner of impressions and make no sign . . . but their minds are active enough. The difference between the two temperaments is most marked in the greater tenacity of the sensory children. . . . The thoughtful teacher, who studies and understands child nature, finds that on the whole his best work can be done with the less immediately responsive children.'—*John Adams.*

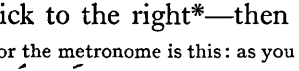
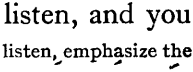
125. Now let us turn from the perception of visible and tangible things like rattles and oranges and consider the perception of music. Music, like other things has, certain qualities, from which we

* See 'Teacher's Guide,' page 84.

receive sense-impressions. They all reach us through *one* sense-organ, the ear; but there is infinite variety, nevertheless. Sensations of pitch, with an immense range of highness and lowness; sensations of loudness and softness, of long sounds and short; and sensations due to the peculiarities of the instrument producing them—voices, strings, pianoforte, etc. The simplest little tune, whistled or sung, gives us many sensations of long and short, high and low, and from the combination of these we get a percept of the tune. The combination is by grouping, as in melody and rhythm, or by fusion, as in a chord.

126. And the fringe of meaning? Again it is for behaviour. From babyhood onward it is a *movement*-meaning. Some little children are so sensitive to music that it sets their whole bodies in motion, with every sign of pleasure in the movement. At first it is only a *some-sort-of-movement*-meaning; but gradually it becomes rhythmical, for man is a rhythmic animal. He is made that way.

127. Wundt shows us, by a very simple experiment which any of my readers can try for themselves, that it is extremely difficult to hear unrhythmically. Set your metronome going—first making sure that the instrument is correct in its ticking, i.e. that the tick to the left is not louder than the tick to the right*—then listen, and you

* The test for the metronome is this: as you listen, emphasize the ticks as  , etc., and then as 
If you can hear the ticking equally well either way, the instrument is fit to experiment with; for you have proved, by hearing *the same tick* as a strong or a weak one, that the difference is entirely in yourself, a subjective difference, as we call it.

will find that you are mentally grouping the ticks with some kind of recurring accent. Although the ticks are actually uniform in intensity you will hear them as—

or as—

You can, in fact, *hear into* any uniform row of beats almost any grouping you like. You can group them in threes or in fours as easily as in twos. You will find, too, that it is difficult to hear the ticks as of equal intensity, though you may have proved that they are equal. Wundt explains this by saying that our consciousness is rhythmical, and that it is so because our whole organism is rhythmical.

128. All through life the hearing of music is accompanied by a strong tendency to 'behaviour' of some sort. There is music that makes us laugh, music that makes us weep, much music that stirs us to 'keep time' bodily. As we walk along the street we sub-consciously march to the tune of the barrel organ, and a feeling of conscious irritation arises when the time of the tune does not fit our walking pace. Watch the faces of the audience during the performance of a modern orchestral work, in which the composer has successfully *camouflaged* the natural bar-accent and avoided the restful fall of a cadence. The musicians are listening with a look of strained interest, and the rest—are simply bored. Then let a Haydn symphony begin, and all over the hall heads are

nodding (especially old heads) and hand-movements refuse to be inhibited, and the very air seems to be alive and moving in waves of rhythm. Dignified people may inhibit the suggestions of their nervous system, but even these, I dare aver, are keeping time inside.

129. The germ of truth in the eurythmic scheme lies in the fact that our ideas of rhythm undoubtedly begin from movement. Undoubtedly, too, from the movement of walking. All creatures walk rhythmically. The click-clack of the horse's hoofs on the road is regular. We hear nothing when the cat walks across the room or the tiger paces its den, but we see the regular swing of its body.

130. The walking movement gives us a *one-two* rhythm, and cannot give us anything else. Titchener says:

> 'The four limbs are, so to speak, four pendulums, attached to the trunk of the body. As we walk or run the legs swing alternately, and with each leg swings the arm of the opposite side—there we have the basis of the idea of rhythm. . . . Movement can give us nothing but *one-two* rhythm; sound and movement together give us the one-two-three rhythm of music and dancing.'

131. The last sentence raises an interesting question. What was the origin of the one-two-three rhythm? Was it spontaneously generated by music and did people learn to dance to it, or did dancers invent it, and was music made to fit in with it? It has been suggested that it is the rhythm of breathing, i.e. inspiration, one beat; expiration, two beats. But we only breathe in

that way when we are lying down. When upright and in movement the in and out breaths are equal.

132. Be that as it may, we are evidently right in beginning the child's perception of time in music with the natural *one-two* rhythm, because we start where the child *is*. However unmusical he may be, at least he can walk! And if we can get him to *listen* as he walks he will probably begin to feel a connection between his natural *one-two* swing and the *one-two* rhythm of the music. In spite of being made on the pendulum plan, a child here and there seems incapable of keeping a perfectly even step with others. It is his ear that is at fault, not his limbs. How are we to deal with a pupil of this kind? In something like the way in which a circus bandmaster treats the horses. Those who have been to a military tournament have felt a thrill of wonder and delight when a troop of horse has gone through complicated evolutions *in time* (apparently) to the music of the band. The audience cries 'How wonderful! The creatures are trotting to the music.' But if you turn your eyes on the bandmaster, you will find that it is the music which is trotting to the horses. This trick would not be possible were there not a fairly reliable regularity in the stepping of the animals, which, of course, are matched in size as nearly as possible. Suppose you treat your unrhythmical pupil in this way. Take him alone, of course. Tell him to keep listening to the music all the time. Get his attention *away* from his feet. Then temper your playing to his stepping, and after a while he will

probably feel the correspondence. There is sufficient regularity in his walking to begin with, and being a 'human' and not a horse, there is a possibility that in time the connection will be established, the habit of listening formed, and music take the lead. The experiment is worth trying. There is, at all events, a better chance of success this way than by the plan of placing the unrhythmical pupil to march behind one with a good ear, and telling him to 'Watch Mary and try to march like her.' For not only is there a necessary interval between the looking and the imitating which throws the whole thing out, but the attention is switched off from the music, and looking is substituted for the *listening* on which all depends.

133. We see, then, that a musical percept is formed, like any other percept, from a union of sense-impressions, with this essential difference, that whereas for the perception of other objects we may need a contribution of impressions from several senses, for the perception of musical facts *we are entirely dependent on one sense.* In classifying the senses as to their value in knowledge-giving, writers differ. Hearing generally ranks next after sight; some place it lower (sight, touch, hearing), and it has been said that it is 'one of the least fruitful organs of direct knowledge.' From one point of view this is correct, for the writer was probably thinking of verbal information, and verbal information is not direct knowledge; in early life it gives little knowledge at all. But, with regard to music, hearing is *the only source of direct knowledge.*

134. The realization of these simple facts, which each one of us can verify by introspection and experiment, upsets altogether the traditional notions about music teaching. For if music can only be perceived, or known, through the ear, and if the teaching process depends upon the nature of the learning process, we are shut up to teaching it through the ear. There is no getting out of that.* And it is not enough to have a weekly class for ear-training tacked on to the school time-table, to show that the school is up to date, if, in the other departments of its music teaching, the ear is left out of account; if, in the teaching of notation, signs come before the observation of the facts they symbolize, and if the pianoforte-playing is not made a matter of listening all through. Listening for time, for pulse, accent, and measure; listening for tone, in quality and quantity; listening for change of key, for phrasing, for balance and proportion, for question and answer, for inner parts, for basses, for chords and progressions—for all these as the pupil gradually approaches them, not through formal lessons, but by observing them as they occur. They all occur in the simplest music, so that in his own little pieces the pupil makes the acquaintance of the kind of

* We must distinguish between teaching '*by* ear' and '*through* the ear.' Teaching by ear belongs to that important nursery and kindergarten stage when children are learning to know tunes as *wholes*, by simple rote singing, without any attempt to split them up into time and tune, or to teach notation. Teaching through the ear belongs to the school age, and refers directly to the teaching of notation. It means that every musical fact for which there is a notational sign shall be presented to the pupil first through hearing, compared with other related sounds, known and recognized and named, before the notational symbol is shown him.

material of which all music is made. In all his little pieces, too, he finds a plan, notices imitations and repetitions of figures and phrases, and by and by he begins to expect these things in all the music that he hears.

135. Also, he begins to want more scope for listening, and this is where what (for lack of a better term) we call the 'Appreciation lesson' comes in. What the child has learnt to know through small examples gives the larger example a meaning for him, and therefore helps his perception. And this does not mean that we want a child (or anybody who is not on the staff of a newspaper) to be in a constantly analytic frame of mind when listening to music. If we tried ever so hard we could not put the young pupil in that attitude, for it would be foreign to his stage of development; but we would not if we could. All that we ask is that the learner shall hear more music, and music of a larger kind, than his school experience can give him; and that this larger music shall not be for him the 'big, blooming, buzzing confusion' that sensation alone would make it. He should have an inkling of its meaning, if only—to begin with—by his ability to follow one little 'bit of tune' as it plays hide and seek through a composition. Play to the children, then. Give them opportunity for hearing and some guidance in listening—for hearing and listening are two different things. And give them, in your piano lessons, something to listen *with*; for you know from your own experience that what we get from any lecture, or any concert, or any picture-

gallery, depends on what we bring to it. If it be true that 'we only see what we know,' it is equally true that 'we only hear what we know.' The pupil whose observing powers are guided and exercised in his individual piano lessons is the pupil who will most fully experience in the Appreciation class or in the concert-room the interest of expectation and the joy of recognition.

136. We must remember, however, that in the least intelligent listening to music there is a certain amount of perception; and that in the most intelligent listening a large amount of the enjoyment comes from sensation. Our intellectual satisfaction depends on the degree of our perception, but it is sensation which gives us the thrill.

137. I want you to be clear about the difference between Sensation and Perception, because in our adult consciousness they come so close together that it is difficult to separate them in thought, or to realize that one may come in advance of the other. Perception, in our experience, is instantaneous; yet there must be a moment, however short, when sensation alone is present, before the 'knowledge about' hurries up and wraps it round.

> 'Ideas *about* the object mingle with the awareness of its mere sensible presence. . . . This higher consciousness about things is called Perception; the mere inarticulate feeling of their presence is Sensation, so far as we have it at all.'—*James.*

Sensation, then, is the simple message, or group of messages, from some present object. Perception includes these sensations, but adds to them what Professor Sully calls an 'escort' of revived sensation.

Sensation can be present without perception; it is so in the earliest stage of an infant's life, but rarely in adult life.* Perception cannot occur without sensation, for we must be aware of an object before it can have a meaning for us.

And the moral is that we cannot teach music by talking about it. We cannot teach it from 'Catechisms' and little 'bookies' on the Elements—though there is a distinct use for such books. We cannot teach harmony through ink and paper; the very word 'harmony' tells us that. Music, from start to finish, is a thing of hearing. Without sensation, no perception.

* Professor James says that 'sensation *never* takes place in adult life without perception also being there.'